

REMARKS

Applicants amend examined Claims 1, 2 and 19, and withdrawn Claims 3, 5 and 10. Claims 13-18 are cancelled, without prejudice, pursuant to the restriction requirement which has been made final. Applicants have presented new dependent claims 20-27. Support for these claims is found in the specification and claims as filed including, in particular, the abstract, and claims 11 and 12. Following this amendment, Claims 1-12 and 19-27 are pending. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

CLAIM OBJECTION

Claim 1 is objected to as having typographical errors. Applicants thank the Examiner for noting the discrepancies. As correctly stated by the Examiner, the lower limit for P_2O_5 should be 0.1 wt % and the lower limit of CaO should be 0 wt %. The appropriate amendments have been made.

REJECTION UNDER 35 U.S.C. § 103

Claims 1, 2, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Smith et al.* (U.S. Pat. No. 5,747,395, "*Smith*"). Claims 1, 2, and 19 additionally stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Inoue et al.* (Japanese Patent Publication 60-221338 A, "*Inoue*"). These rejections are respectfully traversed.

The Office Action proposes that while *Smith* and *Inoue* each fail to teach any examples or ranges that are sufficiently specific to anticipate the instant claims, both *Smith* and *Inoue* teach a glass composition having overlapping ranges components, and under MPEP 2144.05, establish

prima facie obviousness. At the outset, Applicants note that independent Claims 1 and 19 have each been amended to recite that the boron aluminosilicate glass is free of lead and is an optical glass. Claim 2 is dependent on Claim 1.

Smith pertains to cobalt glass compositions for coatings, namely on-glaze enamels used for the decoration of jewelry, glassware, tableware, and the like. Not only would such a glass composition not be suitable for optical use, the materials required in *Smith* teach away from the present disclosure. For example, considering the 22 example compositions provided in *Smith*, the levels of K_2O are significantly lower than the claimed 6.5% in Claim 1, and lower than the 4% level in Claims 19 (provided that the R_2O material is K_2O), 26, and 27. *Smith* also discloses the use of very high levels of Bi_2O_3 and CoO , upwards of 36.34% and 11.07%, respectively. While those materials are not excluded from the claimed compositions, Applicants respectfully maintain that the use of such high levels is inconsistent with the levels of materials required in the instant claims. For example, the minimum level of all required materials in claim 1 is 75.8%; the minimum level in claim 2 is 82.2%; and the minimum level in claim 19 is 60.3%.

Similarly, the *Inoue* reference also discloses exceptionally broad ranges of materials. While *Inoue* purports to disclose optical glass, it appears that certain embodiments do not even include SiO_2 . The *Inoue* abstract discloses a refractive index of between 1.62 and 1.85. Applicants note that new Claims 20, 22, 23, and 25 recite a refractive index of between 1.54 and 1.62. Claims 22 and 25 recite such a refractive index and further include the optical glass having an Abbe number of between 48 and 57.

Applicants respectfully maintain that one skilled in the art would not look to the *Smith* and *Inoue* references, either singly or in combination with the other references made of record, in order to arrive at the claimed optical glass compositions. The references disclose numerous

broad ranges of materials that encompass a very large number of distinct possibilities, providing no guidance for one of ordinary skill to arrive at the presently claimed optical glass without the impermissible benefit of hindsight. Accordingly Applicants respectfully assert that Claims 1, 2, and 19 are patentable for at least these reasons.

Claim 19 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Speit et al.* (U.S. Pat. No. 4,520,115, "*Speit*"). This rejection is respectfully traversed.

The Examiner states that while *Speit* fails to teach any examples or ranges that are sufficiently specific to anticipate the instant claims, *Speit* teaches a glass composition having overlapping ranges components, and under MPEP 2144.05, establishes prima facie obviousness. *Speit* is directed to a highly absorbent *lead containing* alkali metal silicate glasses for cathode ray tube image screens. *Speit* specifically teaches the use of between 5-60 wt % PbO. As discussed above, Claim 19 has been amended to recite that the boron aluminosilicate glass is free of lead and is an optical glass. Additionally, many of the elements recited in Claim 19 are notably absent in the 10 different examples of *Speit*, in particular, B₂O₃, Al₂O₃, P₂O₅, and ZnO. Thus, in addition to relating to a different type of glass composition, *Speit* does not provide any suggestion, teaching, motivation, or any other guidance for one skilled in the art to selectively pick, choose, or substitute the materials disclosed in *Speit* to obtain a high quality optical glass.

Thus, Applicants respectfully assert that Claim 19 is patentable over this rejection for at least these reasons and those discussed above and in regard to *Smith* and *Inoue*.

WITHDRAWN CLAIMS 3-12

In view of the patentability of Claim 19, as discussed above, Applicants request rejoinder of Claims 3-12, which claim species of the composition of Claim 19. Claims 3-12 have been amended consistent with the amendment in Claim 19 and are patentable for at least the reasons discussed above.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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